

When design and entrepreneurship meet:

A qualitative study of design entrepreneurs' challenges in running a business

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Abstract

Designers can be considered natural entrepreneurs because of their mindset, aptitudes and reasoning processes. However, it has been pointed out that design entrepreneurs lack business skills and competences, and that extant studies leave a sketchy picture of design entrepreneurs. The research objective of this thesis is to empirically determine the challenges designers face in running their business to confirm the extant literature as well as to provide practical insights to designers and design students who want to successfully operate a business.

Data for this study was gathered from semi-structured interviews with 12 design entrepreneurs. Interview questions were focused on challenges they faced during their entrepreneurial journeys. Thematic analysis was used.

Results show that design entrepreneurs lack business knowledge and skills, especially in marketing and sales, managing finances and building profitable business models. Moreover, they were self-aware of their tendency to focus on product development, and that they were not fully aware of other entrepreneurial stages especially when they started a business. Lastly, a scarcity of financial, human and social resources makes their entrepreneurial journey challenging.

The study empirically supports previous literature in regards to design entrepreneurs' lack of business knowledge and skills. Additionally, the study suggests that the design entrepreneur's tendency to focus on developing products might be related to his/her professional identity as a crafter. This study argues that understanding entrepreneurial processes from a holistic view is important for design entrepreneurs, as well as adapting a growth-oriented mindset for survival and success of their business.

Keywords design entrepreneurship, entrepreneurial process, design entrepreneurs

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1. Introduction

1.1 Background

Designers' influence on society is growing. The example of Jonathan Ive, who made a significant contribution to Apple's innovation, has inspired the public to realise that not only can design contribute to enhancing the quality of our lives, but it can also have an impact on our society. As design degrees or backgrounds of the co-founders of Airbnb, YouTube, and Vimeo have become known, they have become a great inspiration for ambitious designers and design students who want to surprise the world with their ideas.

The general public and designers are not the only ones who complement the impact of design. It is also widely recognised by other disciplines, firms, and governments that the pursuit of innovation and creativity can solve complex problems. Especially, as design directly impacts an increase of revenue in companies (Hernandez et.al., 2019), the economic value of design has been widely recognised. Today's designers move beyond the role of creatives who develop the look of products or brands and often lead a C-suite meeting (Jonathan Ive is a case in point) that discuss the overall direction of the business (Fry et al., 2016). Design is regarded as a fundamental ingredient in companies for innovation (Mortati & Cruickshank, 2011) that is crucially needed to survive in a competitive global market (Drucker, 1985). Roger Martin, one of the most influential global business thinkers, states, 'Business people don't just need to understand designers better — they need to become designers' (Breen, 2005).

Since 1980, there has been an effort in design studies to integrate business and design actively, and it has led to the promulgation of the design thinking and design management movements (Anderson, 2014). In the early 2000s, a new design approach that integrates design and business was introduced: design entrepreneurship (Heller, 2002). The reasons

why designers became especially interested in entrepreneurship can be explained as follows.

First of all, in a broader social context, entrepreneurship is regarded as one of the essential mindsets for individuals to be competitive in an unpredictable future. Nussbaum (2013) cites the US military's term VUCA in his book -volatile, uncertain, complex, ambiguous, which came out of the US Army War College in the 1990s to explain the new operating conditions that world military leaders had to face. This term also captures our current society perfectly. To survive in this unpredictable and rapidly changing world, adaptability has become a critical skill for the individual (Fry et al., 2016), and this is a characteristic we can find in the natural attributes of entrepreneurs. They see change as the norm and as healthy, and they actively search for it, respond to it, and exploit it as an opportunity (Drucker, 1985). Thus, individuals could prepare themselves and create values in future society by adapting the entrepreneurial mindset. Having this background of social change, today, entrepreneurship is no longer limited to studies in the economics discipline. The interest in entrepreneurship in engineering and even the arts is explosive (Gunes, 2012).

Secondly, the number of traditional in-house designers has decreased while the number of designers working as freelancers or in small groups on a project basis has increased. This may be due to the voluntary choice of individuals who prefer an independent life, but environmental factors also trigger this phenomenon. The job market is extremely competitive due to the decline in stable jobs (Fry et al., 2016), and there is an imbalance in the number of design graduates and the number of designers required by industries (Santoso, 2010). As designers have to create income without being employed, they often need to become more like business people and adopt entrepreneurship qualities (ibid).

Lastly, designers want to evolve as the subject of business, escaping the limited role of 'helping' the business grow. Heller (2002) encourages graphic designers to become entrepreneurs in his book, *Education of a Design Entrepreneur*. He states the following in the preface titled 'So You Want to Be Your Own Boss'.

‘Given their ability to create original and novel objects, why do so many graphic designers remain service providers? With such creative aptitude, doesn’t it make sense that designers should also be content producers, attending to their own muses, at least once in their lives? They should, and they do’ (p.VIII).

Researchers (Gunes, 2012; Møller et al., 2013; Gaiardo, 2019), like Heller, argue that designers are natural entrepreneurs because of designers’ qualities that are shared with entrepreneurs. Design thinking can also be regarded as a valid reason why designers can become innovative entrepreneurs, as it is proven to be an effective tool that results in organizational innovation (Val et al., 2017).

1.2 Research Gap, Objectives and Questions

On the other hand, it is pointed out that design entrepreneurs’ lacking business skills and competences (Gunes, 2012; Møller et al., 2013; Anderson 2014). It is also pointed out that extant studies on design entrepreneurship leave a sketchy picture of design entrepreneurs (Møller et al., 2013).

To understand design entrepreneurs more clearly, and to confirm extant literature, I deemed that it would be helpful to investigate design entrepreneurs' behaviour in the real world. I would like to empirically investigate what kind of difficulties designers face when conducting business in the real world not only to contribute to empirical design entrepreneurship research but to provide practical insights to designers and design students who want to want to successfully operate a business.

The research questions to achieve the objectives are as follows.

What challenges do design entrepreneurs face when they run a business and what are their weak points?

What should designers do to build their businesses successfully?

These questions are based on the premise that design entrepreneurs may face different challenges when conducting business than entrepreneurs from different backgrounds. Designers have a different problem-solving mode of thinking from those with other academic backgrounds (Cross, 1982), and I speculate that this would make design entrepreneurs act and think differently, facing different challenges in their entrepreneurial journey.

The view of entrepreneurship in this study is based on Gartner's definition of entrepreneurship, which states that entrepreneurship is the creation of organisation (Gartner, 1988). The study views that the goal of entrepreneurship is to build a successful organisation. The notion of 'product' includes various products that businesses offer to the customers, such as objects or services.

2. Literature Review

Before conducting a literature review on design entrepreneurship, I deemed it necessary to gain an overall understanding of the field which has a rich body and long history. In particular, I focused on the perspective of the entrepreneurial process. I judged that it would be fundamentally helpful to analyse the behaviour of design entrepreneurs and determine the processes and behaviours entrepreneurs generally experience in venture creation.

Entrepreneurial opportunity identification is regarded as a central to the domain of entrepreneurship research (Corbett, 2007). I determined that it would also be helpful to understand how design entrepreneurs act and think differently when they decide to start a

business, and how this affects their business journey based on my literature review of the subject.

In the latter section, I describe what has been discussed in design entrepreneurship research, particularly focusing on the commonalities and differences between designers and entrepreneurs.

2.1 Entrepreneurship: The Process Viewpoint

Drucker (1985) focused on entrepreneurs' behaviour, emphasising that everyone can learn to be an entrepreneur and to behave entrepreneurially. In the theoretical field, Gartner (1988) also views entrepreneurship as behaviour. He defined entrepreneurship research in two categories: a *trait approach* that focuses on traits and personality characteristics of entrepreneurs and a *behavioral approach* that studies entrepreneurs' activities in organisation creation. He argues that the behavioural approach is a more productive perspective. The trait approach has not only failed to devise a widely agreed upon definition of entrepreneur and help us to understand the phenomenon, but ultimately entrepreneurship is about creating new organisations and researchers should focus on the *series of actions* that entrepreneurs perform that result in the creation of an organisation (Gartner, 1988).

From this perspective, it is important to understand that new venture creation is a complex phenomenon and there are a lot of variables that affect the process (Gartner, 1985). These require different roles and activities at each stage — as an innovator, manager, small business owner, division vice-president, etc. (Gartner, 1988). This approach has resulted in a meaningful model to describe the process of venture creation and allowed us to understand the phenomenon of entrepreneurship with a more systematic point of view. Gartner (1985) describes six common behaviours in the new venture creation process: locating a business opportunity, accumulating resources, marketing products and services,

producing the product, building on an organisation and responding to government and society.

While Gartner (1985) did not specify the order of entrepreneurial behaviour, the concept of the sequence is more adapted in Baron's (2007) process model of entrepreneurship. Three entrepreneurial phases are presented depending on the timing of the launch of a venture — Pre-Launch, Launch and Post-Launch Phases — and the study articulates individual, group or interpersonal and societal variables that affect each phase.

Bhave (1994) reaffirms and develops theoretical concepts in the venture creation process, such as Gartner's (1985), based on empirical data. His model not only confirms the existence of a conceptual process of new venture creation but that it is iterative and continuous even after a venture is in existence, and it is not linear or chronological.

Cardon et al. (2005)'s study is in line with entrepreneurial process viewpoint in terms of their suggestion that creating a firm requires different action and preparation for each phase. However, they point out that most organizational theories avoid emotion, while entrepreneurs act with emotion. They metaphorically compare the entrepreneurial process to parenting, focusing on entrepreneurs' emotional attachment to their business. This view helps to understand illogical aspects of entrepreneurship such as cognitive biases and entrepreneurial persistence despite poor results.

Zhou (2000) raised an interesting question about the relationship between creativity and entrepreneurship in the process view of entrepreneurship. She claims that it is necessary to investigate whether creativity is equally important and desirable across all entrepreneurial stages. For example, she asks, 'Is creativity equally important in opportunity creation and opportunity recognition?' She also adds the question of whether creativity has any *negative* consequences in the entrepreneurial process. For example, she asks, 'Can an extremely strong drive to achieve high levels of creativity become an impediment in the pursuit of profitability and new venture success?' If we alter the word 'creativity' to 'design' in her

questions, it gives us a chance to question the validity of design in the entrepreneurial process as well.

In summary, from the process viewpoint, organisations are created through a series of phases that are influenced by various variables and require different entrepreneurial actions. Since each entrepreneur and his/her ventures vary, it is more useful to focus on the process of creation of organisations rather than focusing on entrepreneurial traits and personality characteristics (Gartner, 1988).

2.2 Opportunity Identification and Exploitation

One of the domains of entrepreneurship research is opportunity identification (Corbett, 2007), and Shane and Venkataraman (2000) emphasise the importance of understanding this. They argue that the extant definition of entrepreneurs, which focuses on attributes of individuals, can be complemented by asking how, by whom, and with what effects do opportunities for entrepreneurial decisions exist (ibid).

One way in which entrepreneurs can discover opportunities is using their prior knowledge (Venkataraman 1997). The knowledge is about the market, how new technology could be used to create a product or service and customer problems (Shane, 2000). As individuals possess different stocks of information, some people recognise the opportunity and others do not (Shane & Venkataraman, 2000). Social capital can help individuals to be more accessible to information (De Carolis & Saporito, 2006). Social capital enhances the not only timing and relevance but quality of information (ibid).

Possessing prior information is not sufficient to discover the opportunity. Individuals have different abilities to combine existing concepts and information into new ideas (Shane, 2000). Even if they have prior knowledge, they would fail to recognise the opportunity if they are not able to identify new means to an end relationships, e.g. seeing commercial

opportunities resulted from the invention of technology (Shane & Venkataraman, 2000). The ones who have the ability to ‘connect the dots’ between seemingly unrelated events or trends are likely to identify opportunities, perceiving patterns between changes in technology, demographics, markets, government policies and other factors (Baron, 2006).

Corbett (2007) builds upon and extends the discussion in relation between cognitive abilities and opportunity identification. He suggests that individuals’ different learning processes also affect identifying opportunities. When individuals tend to acquire information comprehensively, i.e. relying on their ability to think through abstract concepts and reinterpret prior information, they identify more opportunities (ibid). On the contrary, individuals who acquire information through apprehension, which is relying on tangible, felt qualities of immediate experience will be less likely to identify entrepreneurial opportunities (ibid).

After entrepreneurial opportunity is identified, individuals decide to exploit the opportunity. One of the relevant factors is individuals’ prior knowledge, experiences and perception. Davisson and Honig (2003) argue that individuals who have formal business education and previous start-up experience are more engaged in nascent entrepreneurial activities. In addition, when individuals' aspirations and the perceived value offered by the market are disproportionate, they pursue entrepreneurial opportunity as a career choice (Lee & Venkataraman, 2006). Individuals exploit the opportunity when they perceive that they have higher value, possess greater financial capital, or are overoptimistic about the value of the opportunity (Shane & Venkataraman, 2000).

Individuals’ perception is not always objectively correct, but it might help them to start the business. Cognitive bias is one of the factors that lead individuals to exploit the entrepreneurial opportunity (De Carolis & Saparito, 2006). It can make the business fail because of underestimated the amount of risk, but successful businesses would not have been born without taking in radical action caused by this miscalculated risk (ibid).

The external factor that impacts on individuals' decision to start the business also exists. Having strong social ties, such as having parents or close friends who owned businesses, is an important indicator for individuals to start a business (Davisson & Honig, 2003).

To sum up, it is important to understand how, by whom, and with what effects opportunities for entrepreneurial decision are made (Shane & Venkataraman, 2000). Individuals who possess prior knowledge; cognitive properties, including cognitive bias; and strong social ties, such as parents or close friends who own business are more likely to identify entrepreneurial opportunities. Individuals take advantage of the opportunities when they perceive that they have higher value, greater financial resources or prior entrepreneurial experience and education. An overoptimistic attitude about the value of opportunity also impacts the probability of exploitation.

2.3 Design Entrepreneurship

Gunes (2012) defines design entrepreneurship as follows: "Design entrepreneurship is about producing and marketing the intellectual properties of a viable concept in terms assuming risks, financing, marketing and managing". Anderson (2014) emphasises design entrepreneurs' ability to convert the idea into something marketable and profitable as follows: "Design entrepreneurs have the power to speak the languages of both business and design so that they can effectively (and profitably) take an idea from concept to market" (Anderson, 2014, p.3).

Designers are considered as natural entrepreneurs because of their similar mindset, capabilities, reasoning process and characteristics of entrepreneurs (Gunes, 2012; Møller et al., 2013; Gaiardo, 2019).

Designers and entrepreneurs both work to shape the future (Gunes, 2012; Fry et al., 2016; Hernandez et al., 2019) and deal with uncertainty (Von Kortzfleisch et al., 2013; Anderson,

2014). They are open-minded towards new knowledge and have T-shaped skills (Gaiardo, 2019). They are innovators (Matthews, 2009; Gunes, 2012; Cruickshank & Mortati, 2011), problem solvers (Matthews, 2009; O’Grady, 2012; Anderson, 2014; Fry et al., 2016), creative (Møller et al., 2013; Anderson, 2014; Hernandez et al., 2019), risk-takers (Anderson, 2014; Fry et al., 2016; Val et al., 2017), use an abductive process (Møller et al., 2013) and are effectuate thinkers (Matthews, 2009; O’Grady, 2012; Møller et al., 2013).

While designers share a lot of attributes with entrepreneurs, researchers in design entrepreneurship point out that design entrepreneurs lack management skills (Gunes, 2012; Møller et al., 2013). Designers tend to use limited networks, while entrepreneurs engage with expanded networks (Anderson, 2014). Design entrepreneurs in general prefer to remain small and flexible regardless if this is a major obstacle to growing their business (Tuovinen, 2001, cited in Møller et al., 2013).

Meanwhile, Møller et al. (2013) point out that extant studies on design entrepreneurship leave a sketchy picture of the design entrepreneur as a person with creative skills and potential to become an entrepreneur, but with deficiencies when it comes to business skills and competences. Thus, they investigated overlap between expert entrepreneurial logic (effectuation) and ‘designerly ways of knowing and doing’ aiming to build a clearer picture of a design entrepreneur. They compared the designerly way of thinking and doing and entrepreneurial logic identified by Sarasvathy (2008). Among Sarasvathy’s five principles of entrepreneurial logic, three of them show similarities to the designer’s entrepreneurial process. The summary of these results are given below:

- 1) Bird in the hand principle: Like expert entrepreneurs, designers also utilise the given means and create ends in the process of conceptualisation.
- 2) The crazy quilt principle: As expert entrepreneurs use alliance and pre-commitment from stakeholders, designers are also accustomed to interacting with both users and stakeholders and implement these insights in their interactions to the design.

- 3) The pilot in the plane: Expert entrepreneurs try to control the unpredictable future by actively shaping it instead of trying to predict it. Designers also do not start from the prediction of the future, but being adaptive towards changing circumstances.

The authors admitted that there is a limitation in the study due to the small number of cases. However, this is a meaningful attempt as it provides new insight for future research to avoid the sketchy conclusion that designers are natural entrepreneurs who lack business skills.

To sum up, designers are regarded as natural entrepreneurs because of their qualities, skills and mindset shared with entrepreneurs. However, they lack managerial skills, and contrary to entrepreneurship, they do not show competitive aggressiveness and tend to use limited networks. In general, design entrepreneurship research is insufficient, and leaves a sketchy picture of design entrepreneurs (Møller et al., 2013).

3. Methodology

Qualitative research is useful for constructing a rich and meaningful picture of a complex situation, especially when there is little information on the topic, when the variables are unknown, or when the relevant theory base is deficient or missing (Muratovski, 2016). Moreover, it is effective for understanding the nature of certain situations, settings, processes, relationships, systems, or people (ibid).

As my goal is to understand the nature of design entrepreneurs' reasoning, behaviour and complex situations around them, qualitative research is appropriate for this study. Additionally, qualitative research is more meaningful as prior design entrepreneurship research is insufficient (Møller et al., 2013) and variables are vague.

I choose a semi-constructed interview as it is valuable for eliciting the experience of participants (Galletta & Cross, 2013). Semi-constructed interviews are appropriate because of their vivid and practical insight based on participants' experience so designers and design students can learn what to do and how to think when they run a business.

3.1 Participants

I recruited interviewees among people I knew or design entrepreneurs that I found on internet articles and interviews. I contacted 18 people through social media or email. 13 people agreed to participate and five people did not respond. The pilot interview was conducted to test the initial research questions and to refine my interview skills. Thus, data from 12 interviews were used for analysis. Eight interviews were conducted face-to-face, and four interviews were conducted through email. Face-to-face interviews were conducted in a casual environment, such as a coffee shop or a participants' office.

All participants were Korean and doing business in Korean targeting that market. They were all founders and CEOs. Six interviewees were conducting business designing and manufacturing their own physical products. Three interviewees were running a design agency, two interviewees were running a design agency combined with a coffee shop, one interviewee was running an online service platform. The company sizes varied from one to 90 persons, and the year of establishment varied from 2000 to 2019. The average age of the interviewees was 41 years old, the youngest was 32, and the oldest was 50. Five interviewees studied industrial design, four studied graphic design, one studied metal craft design, one studied fashion design and one studied graphic design at the bachelor degree level and interaction design at the master degree level.

Interview No.	Education	Business area	Year of Foundation	No.of previous business experience	Size of company (ppl, including the interviewee)
1	Graphic design	Coffee shop / Design agency	2019	-	1
2	Graphic design	Graphic design agency	2018	-	1
3	Metal craft design	Eyewear	2003	1	2
4	Industrial design	Branding design agency	2017	1	7
5	Industrial design	Online service platform	2015	1	90
6	Graphic design	Dishware	2017	1	1
7	Industrial design	Pet products	2019	1	1
8	Industrial design	Stationery	2011	-	1
9	Industrial design	Furniture	2014	-	5
10	Graphic design (BA) Interaction design (MA)	Coffee shop / Design agency	2014 / 2020	-	4 / 2
11	Graphic design	Branding design agency	2013	-	12
12	Fashion design	Women's shoes and bag	2010	-	13

Table 1. Interviewees' profiles

3.2 Data Collection

Interviews were conducted from August 2019 to August 2020. The interview questions focused on challenges that the participants faced as their businesses grew. Nine questions including the ones to open and end the conversations were asked, and interviewees were allowed to freely lead the conversation when it was needed to understand the underlying intention of their behaviour and the reason for their decision in their entrepreneurial journey (Appendices). The average duration of the interview was 42 minutes. Languages that were used in interviews was Korean that was the mother tongue of interviewees and me. The interview transcription was translated to English by me.

3.3 Data Analysis

Thematic analysis was used for data analysis. The eight recordings of face-to-face interviews that lasted between 24 ~ 60 minutes were transcribed. I familiarised myself with the data by reading quickly and then started to identify codes that were repeated, interesting, unexpected, linked to my prior literature review and emphasised by participants. I paid attention to what motivated them to start their business as well as challenges that they perceived to understand the underlying intention of interviewees' entrepreneurial behaviour and decisions. I grouped the segments that showed thematic similarity and analysis according to how they related to each other, and determined what merited discussion. I mapped themes and findings to the map adapted from Gartner (1985) and Hallam and Dévora (2009)'s entrepreneurial process as the final step of the analysis.

4. Results

In the results of the data analysis, 127 segments were identified and categorized into 3 main themes and 9 sub-themes (Table 2). Themes 1 and 3 show thematic similarity regarding subjects that are typically discussed in business disciplines, while Theme 2 is exclusive, showing a unique aspect of design entrepreneurs.

The results are presented in order of the number of segments of main-themes (Table 2).

Main Theme	Sub-Theme	Interview												Total no.of segments
		1	2	3	4	5	6	7	8	9	10	11	12	
1. Lack of business knowledge and skills	Lack of knowledge and skills in marketing & sales	0	5	8	0	0	4	1	4	2	0	0	0	24
	Lack of knowledge and skills in managing finance	2	2	2	3	0	0	1	0	7	0	0	2	19
	Lack of profitable business model	0	0	6	2	2	0	0	0	1	0	0	0	11
	Lack of knowledge and skills in managing human resources	0	0	0	0	1	1	0	0	0	1	1	0	4
Total no.of segments		2	7	16	5	3	5	2	4	10	1	1	2	58
2. Focus on product development	Being persistent in their design vision and quality of the product	2	0	7	1	0	5	1	4	4	0	0	0	24
	Lack of understanding other entrepreneurial phases besides of product development	2	0	6	2	1	1	2	3	0	1	0	1	19
Total no.of segments		4	0	13	3	1	6	3	7	4	1	0	1	43
3. Lack of resources	Lack of financial resources	2	0	5	0	0	0	2	1	1	0	0	0	11
	Lack of human resources	4	0	0	2	0	0	0	3	0	0	0	0	9
	Lack of social resources	0	2	0	4	0	0	0	0	1	0	0	0	7
Total no.of segments		6	2	5	6	0	0	2	4	1	1	0	0	27

Table 2. Resulting main and sub-themes

4.1 Lack of Business Knowledge and Skills

The first main theme reflects interviewees' lacking business knowledge and skills (n=58). All interviewees self-reflect that they were lacking business knowledge, especially when they first started the business. They all tried to overcome their weak points by learning by doing or educating themselves by reading related books or participating in business training programs.

There are four sub-themes included: lacking knowledge and skills in marketing and sales, managing finance, creating profitable business models and managing human resources. The former two sub-themes include further sub-themes which describe more details about the properties of the sub-theme.

4.1.1 Lack of knowledge and skills in marketing and sales

The first subcategory reflects the interviewees' struggles to market and sell their product (n=24). More specifically, six interviewees described that they did not know how to sell their products when they started their business and five interviewees mentioned that this was something in which they continued to focus the most.

This subcategory can be classified into further sub-themes: marketing and sales.

Five interviewees mentioned their lack of knowledge and skills in marketing (n=11). Notably, most of the data was identified from Interview 4 (n=8). The interviewee claimed that the advantage of understanding marketing was not only to increase sales, but to communicate more easily with other stakeholders such as marketers from the distributor companies and understanding their perspective. Four interviewees, including him, were active at learning about marketing by reading books or doing it in practice.

I used to think like, “Why did my business fail?” “Why can't I make money?” Then I realised that I needed to know about marketing. So even now, almost all of the books I read are marketing books. These are not academic professional books, but I think I probably have all the books that have recently been released in Korea related to marketing. [Interview 4]

Seven interviewees mentioned their challenges in sales. (n=13). They were confident about the quality of their products, but did not know how to actually sell in the market. One interviewee said that if someone had advised him to practise selling any products with any means before he actually started developing his own products and starting a business, he would have experienced less difficulty. [Interview 6] Moreover, all interviewees generalised that designers were not good at sales or were not keen to be active in sales activities.

I wish someone had advised me two years ago, like, “Why don't you buy mugs from others and sell them as practice for understanding the distribution system of your product?’ ... Well, I thought I could do it after I finish developing my product. [Interview 6]

I think most designers do not like to do sales. But if you really want to be independent and escape from being an employee in a company, you should actively do sales and make customers. [Interview 2]

4.1.2 Lack of knowledge and skills in managing finance

The second sub-theme includes interviewees' wide range of difficulties related to money (n=19). Interviewees not only had problems in areas related to financial management in general, such as finance and accounting, but also in areas such as pricing and getting paid properly by writing legal contracts. The further sub-themes are discussed in the following.

Four interviewees described challenges in finance and accounting (n=9). Two admitted that they were not good at calculating numbers or money in general. Another two interviewees spoke of the lack of skills in understanding how to manage the money from a broader perspective. One interviewee mentioned that it was critical to track money that they had not realised by checking inventory thoroughly [Interview 12]. Another interviewee admitted that he was not sure if his company was making a profit or not in the beginning of the business [Interview 9].

Pricing the product was challenging for the interviewees (n=5). Four interviewees said that it was difficult to accurately judge how much they should charge for their products, and expressed difficulty in negotiating or talking about prices with clients.

Two interviewees who manage design studios emphasised that even though it was difficult to talk about prices, it was better to do it confidently, rather than setting prices too modestly [Interviews 2 & 4]. Another interviewee who sold tangible products was trying to take into account the complex variables such as competitors and the market situation, with the effort of learning about pricing professionally [Interview 9].

I'm not an expert on pricing. That's why I'm reading a lot of books about pricing now. Customers consider many variables so I need to consider them when I do the calculations. This is a difficult process. The more you know that, the more difficult it is. [Interview 9]

It is important to consider the risk of not getting paid by the customers or business stakeholders. Two interviewees had lost money because they were scammed, and this had put them in a very difficult situation for years. Their problem was that they did not have a proper contract, and started working for the clients based on credit because they had already worked together a few times [Interview 7] or the client was introduced by an acquaintance [Interview 9].

We had such a difficult time because the client didn't pay us at the end of the project. We just started working on the project as they promised to give us money and we just believed

it. I was just starting my business at that time, and I know many similar cases are happening to rookies. [Interview 9]

4.1.3 Lack of profitable business model

The third sub-theme reflects that interviewees did not have a strategic and profitable business model (n=11). Four interviewees described the difficult situation that this created. The common point was that they purely enjoyed and focused on developing products rather than having the same level of interest or intention in building strategic business models. However, they all eventually realised that they needed to make a profit, and they shifted their focus on products to building a profitable business model. For example, one interviewee decided to compromise between design quality and cost efficiency for his goal of creating more profits. As his main product line was not profitable because of the expensive material costs caused by his high standard of design quality, he added one more product line that was optimised at attracting more customers with lower costs for his goal of increasing revenue and profit [Interview 3].

Anyway, I'm a designer, and creating outcomes is my job and I feel the most happiness in this. But anyway, in order to keep my work, I needed to be less worried. If there's something that keeps generating income consistently, I feel more happiness in my work. If you do not have enough money to pay your employees, you can't concentrate on your work. How can you design better if you are stressed out? So you have to consider how to make a profit and management strategy as the operator of your company. [Interview 3]

What I realised at that time was that you must create a profit model while doing good things that benefit the world. [Interview 5]

4.1.4 Lack of knowledge and skills in managing human resources

Managing employees was also a concern for the interviewees (n=4). Two interviewees explained that managing their employees was difficult. As they expanded their business, it seemed important to consider the quality of human resources and how to educate them as well. For example, two interviewees who had more than 10 employees said that the most focused part of their business right now was attracting talented people and training them to perform at their best and creating a great organisational culture.

So I decided to hire another designer for the first time. I tried to diversify our design solutions by hiring someone who had different properties than mine. We were able to build and solidify our own unique approach by training designers who were inexperienced in branding. [Interview 11]

As the number of employees grew to 20, 30, 50 and is now around 90, I focused on two things. First, how we could sustain the equal and autonomous organisational culture which we pursued from the beginning of our company, and second, how employees with diverse experiences and expertise could become an organisation that converges, collaborates, and produces the best results.[Interview 5]

4.2 Focus on Product Development

The second main theme (n=43) indicates that design entrepreneurs focused on the product development stage. Seven interviewees stated that they, or designers in general, tended to be overly focused on creating unique, high-quality products.

The focus on the product development stage seems to be related to the innate tendency of designers who like to create something. For example, some interviewees said they had pure pleasure in making products even when the business was not going well, especially early in the business. This might be the reason why they were less active in focusing on different tasks and roles in other entrepreneurial stages, such as marketing and sales.

Even though interviewees were clearly aware of this tendency, they revealed different perspectives about it. Some interviewees perceived that it was not helpful to the business [Interviews 1,3,4,6], while others were not sure whether it impacted their business in a positive or negative way [Interviews 7,8,9].

4.2.1 Being persistent in their design vision and quality of the product

In this sub-theme, design entrepreneurs showed a tendency to create their own original products, and the tendency to stubbornly pursue the creation of high-quality products. (n=24). All seven interviewees in this sub-theme were self-aware of this tendency, and four interviewees indicated that this had a negative impact on the business. They described this tendency using the words ‘persistance’ [Interview 1, 3 4], ‘being artists’ [Interview 1, 6], or ‘designers’ own world’ [Interviews 4, 6]. This means that they pursue their own design vision, rather than reflecting the taste of customers who actually use the product. They strongly argued that designers should abandon this tendency and create more popular products by actively reflecting customer opinions and market reactions.

In particular, designers are a little stubborn. I'm also very stubborn, single-minded. But when you do business, it's completely useless, unless you're really at this level (placing his hand over the head), where people chase you, and beg for your help. And designers, designs are strictly commercial. There is a client who gives you money. It's not about doing art. If you want art, do art. I also had a hard time because of this, because of this gap. Now I compromise to some level. [Interview 1]

Designers have the unique characteristics that they stubbornly persist in something they really want. That's the only goal and designers persist as they would die for it. I was like that too. This is right, this is beautiful and creative. The world will be surprised. I was thinking like this every day. And I became stubborn. [Interview 3]

On the other hand, some interviewees were not sure whether this tendency would benefit the business or not. For example, one interviewee said he would choose not to compromise on product quality because of production efficiency, even though the cost of production rose and was not helpful in terms of business, because their standards for the high-quality products may be a core reason that customers choose their product [Interview 9].

We are not sure if the customers choose our product because of the 1 cm of detail. But I believe and I have this illusion that it actually attracts the customers. [Interview 9]

One interviewee specifically compared the designer to the entrepreneur who had a marketing background [Interview 7], and one with a sales background [Interview 8]. The interviewees said the entrepreneurs (their friends) with marketing and sales background used the strategy that they bought products from others and resold them. So it was easier for them to give up on their first product if it failed. Meanwhile, the interviewees started the business by manufacturing products on their own, which means that they put too many resources into their product. This made it hard to give up on their product even though it failed in the market, because they did not have resources left to start over, or were strongly attached to their products emotionally.

When I meet my friends who are salesmen, it is hard to maintain a conversation. So, in the case of those friends, if they sell something as a test and it is not efficient and doesn't work, they say that they are throwing (money) away relentlessly. But we can't do that. These are our products. When I talk to this friend, he says I'm too stubborn. My friend says, "If it doesn't work, you have to throw it away. Why do you keep doing this?" [Interview 7]

The marketing people think that there is a lot of stuff to sell in the market. They think like “Let’s sell something else if this doesn’t work.” But we are in the situation that we have to go all the way to the end with our product. Make something else if this doesn’t work? This is more difficult. How could I start something over when I am not capable of selling my current product? How can I do something else? This is a situation where we have to see a game somehow up to a certain line, so we are obsessed with it. [Interview 8]

4.2.2 Lack of awareness of other entrepreneurial tasks besides product development

This sub-theme presents interviewees lack of awareness of other entrepreneurial tasks and stages, other than product development. (n=19). They reflected that they did not run their business from a broader perspective in the early days of the business, and that unexpected tasks awaited them.

I thought I could make more money and do better than others. But there were many more things to be done that I didn't realise. [Interview 4]

Most of the interviewees showed confidence in their design skills and commented on the pure pleasure of creating their own products. It seems that they perceived their design skill as one of the opportunities to start a business. They were less interested and had no information about completely different tasks needed for the business besides product development, such as marketing, sales, administration etc., especially when they first started a business.

I was so confident in my design skill. However, I just didn’t even realise that the reason why I was having a difficult time was my lack of capabilities in management and administration. [Interview 12]

In addition, some interviewees seem to lack the business mindset in regards to monetising their product, which seems to be the reason why they did not actively act on other business tasks. For example, one interviewee described that he was an innocent and reckless person who did not think about how to make money at all but just to enjoy making products he liked [Interview 3].

After they survived the early times of the business and learned from the experience, some interviewees tried to focus on other entrepreneurial stages, especially on marketing and sales [Interviews 6,7,8 10]. They perceived the business approach as something broader, and, as time passed, they began thinking about the next steps in addition to developing products.

4.3 Lack of Resources

The last main theme indicates the interviewees' lack of financial, human and social resources (n=27). Interviewees perceived that a lack of resources would make it difficult to start, maintain, and grow a company. They were deeply aware of their difficult situation of the scarcity of resources, but not all of them actively tried to overcome it.

4.3.1 Lack of financial resources

The largest sub-theme is the lack of financial resources (n=11). Five interviewees said that they either lacked seed money when they first started the business, or that they still lacked funds. They perceived that financial resources were essential in starting and maintaining a business. They did not seem to be active in acquiring investment funds and most of them tried to secure their funds by increasing sales. One interviewee [Interview 7], on the other hand, differentiated from the others in that he secured funds through crowdfunding before

producing products, and was actively using this strategy as it was advantageous not only for securing funds but also for promoting his brand.

At that time, I wanted to try something new. I had no plan, nothing, and I had zero in my bank account. I don't think I had that much entrepreneurial aptitude. Anyway, I just quit my job and I just started it. I was hungry. [Interview 3]

I don't have resources to do business. In fact, it's money that keeps you surviving, right? I think you need to have money to do business. [Interview 7]

4.3.2 Lack of human resources

The second sub-theme represents the difficulties due to lack of human resources (n=9). Interviewees ran out of time and stamina because they had to do everything on their own, and they were unable to focus on the essential tasks necessary to grow their business. It is also important to be able to attract the right talent as well. One interviewee said that he could focus on the business after he finally hired a talented employee [Interview 4]. There was another interviewee who had been hiring short-term workers to verify their skills before hiring them as full-time employees [Interview 8] .

It's that I cannot acquire the right talent. I think this puts me in a more difficult situation. [Interview 8]

It's not easy to hire someone who is better than me. Usually people who want to learn from me would like to join the team. Then it is hard to expect improvement. Even though the number of employees is increasing, there is more pressure on me. Luckily, someone who is better than me has joined the team. Now I can focus on the external part of the company while he is in charge of the internal part. [Interview 4]

4.3.3 Lack of social resources

The last sub-theme shows that interviewees lack social capital resources (n=7). There were three interviewees who described these difficulties. Two were inactive in acquiring social resources, even though they were aware of its importance [Interview 2, 8]. One interviewee regarded one criterion for distinguishing between entrepreneurs and non-entrepreneurs was how active in networking and meeting new people the person was [Interview 2]. While she knew that it was important to get new information through social networks, she said she did not have time to participate in networking due to a lot of work. Thus, it can be assumed that she did not have human resources, and that she might not have financial resources to hire employees. Some interviewees seemed not to like meeting people in general [Interviews 4,8]. Only one interviewee seemed to be active in networking activities for business compared to others, but he described that he used to be the one who liked to do everything on his own and disliked meeting people [Interview 4].

Living as a designer, it seems that I have always missed a lot of opportunities for sharing information with other people. I don't have time to go out for the sharing activity. Once a project comes in, I try to do it no matter what. I know that I have to secure time to go out to meet people, but these kinds of B2B contracts that are in charge of cash flow for our company, are hindering that. [Interview 2]

I used to like to play alone, you know, there are some kids like that. I don't hate meeting people right now, but I think I've made my own rules, and I feel comfortable in it. So, when people enter my world, I want other people to fit into it or not come in the first place if they can't. [Interview 4]

4.4 Motivation for Starting a Business

In the previous sections, the results were more directly related to the difficulties the interviewers encountered after they started their businesses. In this section, interviewees' unexpected patterns of business motivation are explained. This seems to be related to their entrepreneurial opportunities before they launched their business as well as their behaviour in the following entrepreneurial stages.

The interview questions for this study were designed primarily to give direct insight into the challenges that designers face in the entrepreneurial process. Therefore, the first question in the interview, 'What motivated you to start a business?', was mainly asked to serve as the first step in enabling the interviewees to immerse themselves in the interview naturally and as an ice-breaking method. In the interview question, an unexpected pattern was discovered, which merits further inclusion in the research results.

Seven interviewees showed that their business motivation was self-oriented. For example, they started a business to do something they enjoyed, use the technology they were interested in, or to pursue their design vision. Related responses included the following:

I was eager to pursue my design vision, which I could not do at the company. That's why I started my business. [Interview 12]

I wanted to be involved in more design projects as a designer, rather than taking on the responsibility as a manager in a company. [Interview 1]

As I was writing my master's thesis, my interest in designs that exist around things, uses, people, behaviours, and patterns grew deeper. So, I started to think about things that I could touch and feel with my hands, such as objects, people, houses, furniture, and spaces, not HCI and service design that my friends were studying. After that, I learned production techniques, and became seriously interested in coffee and learned about it. Since then, I

have designed furniture based on my experiences and prepared to open a cafe while thinking about the space where the furniture would be placed. [Interview 10]

Also, the interviewees seemed to value autonomy.

At that time, my friends were running a design studio. They had this structure where they made their own decisions and took responsibility for everything from the choice of clients to work with, the way of working, and the outcome. I was working as part of a team because I was working in a relatively large agency, and at that time, I was inspired by the independent management style of my friend's studio. [Interview 11]

With the simple idea that I could do everything if I owned my own business, I dared to abandon the many job opportunities that came about when I graduated from graduate school. [Interview 10]

The remaining five interviewees said that they had started a business for economic compensation [Interview 7], the influence of family members and people around them who had experience in business [Interviews 2,6,9], and the desire to have a great influence on the world [Interview 5].

The similarity of business motivations found in the seven interviewees was surprising, but the completely different business motivation of Interview 5 was also unpredictable. While all seven interviewees had a self-centred motivation, he seemed to have an external-centred motivation. He said, ‘Since I was a middle and high school student, I had this dream of becoming a person who makes a big impact in the world’.

In addition, three interviewees said that they were confident in their design skills when starting the business, and this seemed to have helped them decide to start a business.

I felt that the direction of the design I wanted to do was too clear and not in line with the company that I was working for (I was a bit more confident at the age of 28). I wanted to work on “mine” as soon as possible. [Interview 12]

When I first started a business, I think I just wanted to roar to the world that I was good at this 3D technique. [Interview 4]

One of the interviewees said that she was confident in her design skills when she decided to open a business, but when she realised that she was good at things besides design, it made her confident about choosing the entrepreneurial path.

I thought like I was not a typical designer. I knew I was good at designing. Well, I am really confident about it, as many people have already proven it. But when I realised that I was good at something besides design, like contracting with clients and meeting people and doing something with them, I thought that I was a person who had to do business with design. [Interview 2]

5. Discussion

The current thesis explored the challenges that designers face when building their businesses. Despite the value designers can add through innovation (Brown and Katz, 2011; Aftab et al., 2016; Hernandez et al., 2017), lacking business knowledge and skills, lacking awareness of other entrepreneurial stages beside product development and lacking resources were highlighted as common challenges for design entrepreneurs in the results of the current study.

In the first discussion section, the results are mapped against the entrepreneurial process (Figure 1) that is adapted from Gartner (1985) and Hallam and Dévora (2009). The

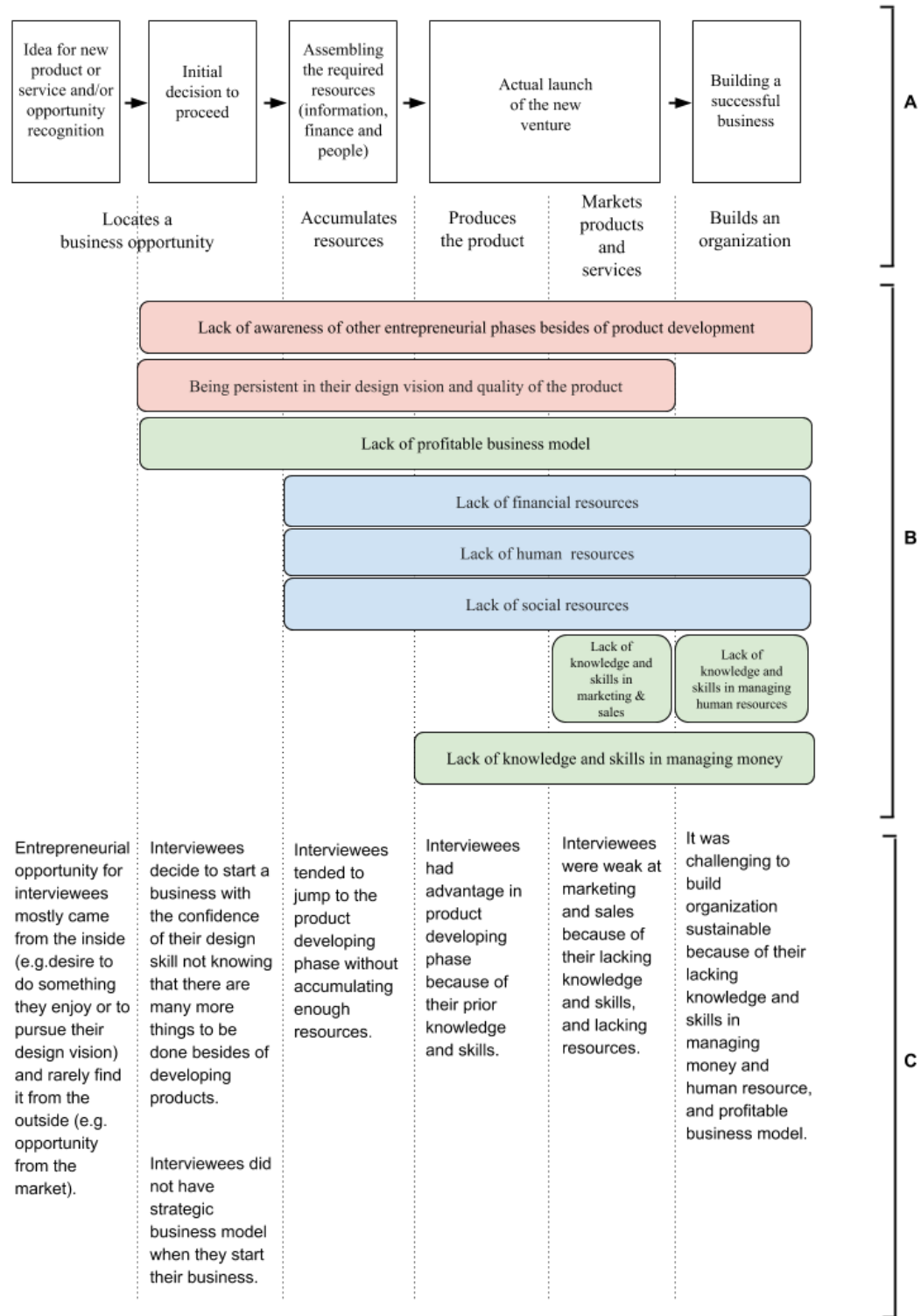
purpose of mapping is to identify how design entrepreneurs' challenges contribute to their entrepreneurial process from a broader point of view.

In the second discussion section, I focus on interviewees' tendency of focusing on development and argue how it could be related to designers' professional identity and possible risk in running a business.

In the last discussion section, I focus on interviewees' business motivation which was surprising and unexpected findings from the interviews. I describe how different business motivations of interviewees resulted in other entrepreneurial actions, especially in acquiring resources, which seemed to be related to the growth of their business.

5.1 Design Entrepreneurs' Challenges: From an Entrepreneurial Process Viewpoint

Gartner (1988) claims that it is meaningful for researchers to investigate entrepreneurs' behaviours in the process of creating an organization. In this regard, design entrepreneurs' challenges and observations during the interview was mapped against Gartner (1985) and Hallam and Dévora (2009)'s entrepreneurial processes (Section A in figure 1). It shows that the challenges of design entrepreneurs have a partial or total effect on their entrepreneurial process (Section B in figure 1). Additionally, it reveals design entrepreneurs in this study faced different kinds of challenges on each entrepreneurial stage as well as showed unique characteristics, such as their business opportunity and motivation (Section C in figure 1).



A. Entrepreneurial process and activities, adapted from Gartner (1985) and Hallam & D vora (2009)
 B. Identified sub-themes placed on related entrepreneurial process and activities
 C. Summary of findings related to design entrepreneurs' entrepreneurial process and activities

Figure 1. Entrepreneurial process adapted from Gartner (1985) and Hallam and D vora (2009), and design entrepreneurs' challenges

A lack of knowledge of other entrepreneurial stages impacts the entire entrepreneurial journey, as it prevents design entrepreneurs from learning or taking on different roles and tasks required in other entrepreneurial stages. Eventually, this could result in failure to build an organisation successfully. The tendency of design entrepreneurs to focus on product development can exert influence throughout the entrepreneurial process from start to finish as well for the same reason. A more detailed discussion follows in Section 5.2.

Not having a profitable business model at the start of a business continues to affect the rest of the entrepreneurial process. Most interviewees reflected that the reason why they failed in their first attempt of business was the lack of a profitable business model. The results support the suggestion from literature that designers should be educated to understand how to generate profits (Gunes, 2012; Anderson, 2014). Building a well-defined business model would allow the design entrepreneurs to have a more holistic viewpoint for the business, ultimately generating revenue for building and keeping a successful organisation.

Lack of resources also affects most of the design entrepreneurs' journeys. The lack of resources makes other stages more difficult for design entrepreneurs, because they do not have prior knowledge and skills (e.g. marketing was more challenging for the interviewees because they did not have resources OR knowledge and skills.). Generally, it is exceptionally challenging for entrepreneurs to construct an initial resource (Brush et al., 2001). It can be more challenging for design entrepreneurs because they are less educated in understanding the challenges and complexities to acquire resources, whereas business students are more trained and familiar with the concept (Anderson, 2014). The result of the study supports the argument that design entrepreneurs are challenged due to scarce resources, especially financial resources.

Interviewees shared their difficulties resulting from a lack of resources but they did not seem to be active in acquiring it. They seemed to secure the financial resources by increasing sales, or had been funded by crowdsourcing platforms. This is in line with findings from the literature. It is pointed out that designers are likely to save money on

their own, or get help from strong social ties or use crowdfunding to raise capital resources, but not likely to raise funds from outside actors such as angel investors or venture capitalists, due to their lacking knowledge or resources (Anderson, 2014). It might be related to designers' tendency to use a limited network (ibid), which was also revealed from the result of the study (Sub-theme 3-3). They might be less knowledgeable about where and how to raise funds because they have less information. Social capital impacts an individual's access to information (De Carolis & Saporito, 2006), and design entrepreneurs might need to consider acquiring it more actively for more information, which would possibly lead to a better chance for raising funds.

The results show that design entrepreneurs lack managerial skills. This is consistent with findings from the literature review (Gunes 2012; Møller et al., 2013; Anderson, 2014; Gaiardo, 2019). Lacking business skills and knowledge affects partial or subsequent entrepreneurial stages. Notably, marketing was the most challenging step for design entrepreneurs, followed by managing finances, which affects the product development stage to the building the organisation stage. It seems evident that it is important for design entrepreneurs to learn these business skills not only to run the business more successfully, but also to find more business opportunities. Entrepreneurs discover opportunities based on their prior knowledge (Venkataraman, 1997). If design entrepreneurs understand the diverse aspects and variables of business by acquiring business knowledge and skills, they would discover more entrepreneurial opportunities during their business journey, which would allow them to pivot their idea or come up with better solutions to make their business successful.

In summary, an important point when interpreting the results from the perspective of the entrepreneurial process is that the challenges of design entrepreneurs have a partial or total effect on their entrepreneurial process. In particular, it is surprising that most of the interviewees reflected that they did not recognise entrepreneurial tasks other than product development at the beginning of their business. The reason for this seems to be related to designers' motivation to start a business which is discussed in the next section.

5.2. Design entrepreneurs' focus on product development: Their identity as crafters, and the risk of 'building a better mousetrap'

Most interviewees' motivation for starting a business was related to their inner fulfillment. Specifically, they started a business with the desire to work on something they could enjoy while ensuring autonomy.

The design entrepreneurs' value of self-fulfillment and autonomy is similar to their professional identity. Björklund et al. (2020) identified designers' professional identity as crafters who love their work, based on findings that designers built their work almost perfectly, put high value on autonomy and design was not only considered work but an important value in their lives at a deeper level.

During the interviews in this study, design entrepreneurs revealed the identity of the crafter that Björklund and colleagues (2020) identified, in that they emphasised the high design quality of their product and pursued the originality of the design and the technology they applied, showed the pure pleasure of making the product, or calling themselves 'makers'. Moreover, they were self-aware of this tendency and some of them showed a critical and reflective attitude about it. They argued that the reason why this tendency affected their business negatively was that as they became more obsessed with their products, they could not see the business from a broader perspective, which made it difficult to generate profit and they ultimately failed at sustaining the business.

Anderson (2014) also points out that graphic designers tend to focus on aesthetic and functional design elements, while entrepreneurs focus on applicability and financial viability. She further argues that they should be flexible and open to modify designs understanding that profitability is the key to business success. The advice related to "open attitude" might be helpful for design entrepreneurs who can not abandon their business

ideas when it fails in the market. Results showed that it was hard for some of interviewees to give up on their products even though it was not successful in the market because they put too many resources and attached to their products emotionally. This can be regarded as an example of illogical aspects of entrepreneurship that Cardon and the colleagues (2005) mentioned - persistence despite poor results and emotional attachment.

The following description of the reason for firm failure by Cooney (2012) can be regarded as a basis that the design entrepreneurs' tendency to focus on product development and persistence might be risky.

One of the frequently mentioned reasons for firm failure is 'Mousetrap Myopia-the notion that the world beat a path to your door for having the best mousetrap' (Cooney, 2012). This has similar properties with designers' professional identity as crafters, and the tendency of design entrepreneurs to focus on developing products.

'Building a better mousetrap (product) strategy' has been criticised for several reasons. First, it does not allow you to think about who the customers are and what would delight them, which has to be a prior value for an organisation (Denning, 2011). Second, building a better mousetrap (product) takes a longer time for the 'trial and error' process, which has proven to be effective for high levels of innovation (ibid). Third, it assumes that innovation is only achieved by product, and neglects other incredible possible innovations in production, distribution, marketing, and service (Godfrey, n.d.). Lastly, it requires more capital resources (Bizshift-Trends, n.d.).

Even though not every interviewee perceived that the tendency of focusing on product development negatively affected their business, it seems worth considering the risk. Some design entrepreneurs hold strongly against this attitude and business experts and scholars warn against this. What design entrepreneurs might need to do is to put less resources (e.g. time, energy and capital) on developing a perfect and unique product, and also focus on making it marketable and something for which customers are willing to pay (Hernandez et al., 2019), not taking the risk of falling into 'Mousetrap Myopia Error'. Moreover,

considering that the founder's inability or unwillingness to change is one of the reasons for firm failure (Cooney, 2012), it seems necessary for design entrepreneurs to be open to better or new ideas and options.

It is expected that designers might feel uncomfortable through activities that they should be engaged in, such as marketing and sales, which contradict their natural attributes (Hernandez et.al, 2019). Overcoming this cognitive dissonance (ibid), which is necessary for success (Bros, 2017) might be another barrier for designers to transform their identity as business people and make the business successful.

5.3. Growth Motivation of Design Entrepreneurs and Activities in Acquiring Resources

Much of the literature agrees that psychological or motivational factors affect the growth of enterprises (Cooney, 2012). In this regard, it seems meaningful to discuss design entrepreneurs' business motivation and how it affects their entrepreneurial activities, and how it is related to the success of their business.

An interesting finding from the interviews is that one interviewee (Interview 5) achieved high-growth within a short period of time. Considering that it is widely agreed to determine the high growth level by the number of employees (Cooney, 2012), it seems natural to judge that the interviewee achieved a good level of high-growth as there were 90 employees working at the company.

The interviewee was notably different from the other interviewees in 1) the motivation for starting the business, and 2) the actions taken to tackle the business challenges. The interviewee stated his motivation for starting a business was that he wanted to have some impact on the world. He indicated, *Since I was a middle and high school student, I had this dream of becoming a person who makes a big impact in the world.*

This motivation led him to build his first business which had a social business aspect. This interviewee had a missionary vision to make the world a better place, which seems closer to missionary entrepreneurs (Gruber & MacMillan, 2017). Other interviewees focused on pursuing their personal interests, which is closer to darwinian entrepreneurs (ibid).

The interviewee recognised his lack of business knowledge and skills after he failed to sustain his first business, similarly to other interviewees. The difference between him and the others was his action to improve his lacking abilities. While other interviewees tended to educate themselves to acquire their lack of knowledge and skills, this interviewee decided to focus on acquiring resources, especially human resources, and focused on the growth. He stated the following:

*What I realised at that time was that social enterprises, like my first business, need a profitable model while doing good things to benefit the world. So I learned a great lesson that we could achieve our goals **only when great people joined the team and built a sustainable organisation and grew it.** My first business was stopped, but I would like to continue again someday. I think we will be able to grow this business properly with the experience and knowledge we have accumulated and a stronger network.*

Recognising the importance of human resources seemed to make him more active in acquiring capital resources to hire great talent. As soon as he started his current business, he secured 1.2 million USD dollars as seed money through a venture capitalist in the same year the corporation was founded and 20 million dollars over the next four years.

It seems that the business motivation that derived from his desire to impact society naturally led him to have a more growth-oriented mindset and resulted in different entrepreneurial decisions and actions. He regarded one of the key factors for business success is resources and it seemed to make him active in acquiring it.

Growth motivation of entrepreneurs and the growth of firms have a positive relationship (Delmar & Wiklund, 2008). Having a growth-oriented mindset is important not only for

the success of the business, but for its survival (Orser, 1997, cited in Cooney, 2012). From the results of this study, it was found that the most of the interviewed design entrepreneurs' business intentions were focused on self-satisfaction, which seemed far from or different from a growth-oriented attitude. Previous literature also points out that design entrepreneurs tend to stay small (Tuovinen, 2001, cited in Møller et al., 2013; Gaglione, 2018), and their lacking focus on generating profit and achieving growth might be the reason (Gaglione, 2018).

Indeed, self-satisfaction is an important motivation for establishing a business. However, if the business fails to grow, the business may fail eventually. Therefore, it is judged that the design entrepreneurs should be encouraged to have entrepreneurial skills to build high-growth oriented ventures (Gunes, 2012) and have a growth-oriented mindset in order to at least make their business survive.

6. Limitations

The data was driven from a small number of participants - 12 interviewees. Eight face-to-face interviews were conducted and four interviews were conducted by email due to geographical reasons and interviewees' busy schedules. A limited number of segments were driven from the email interviews as further questions to understand their underlying situation or intention on a deeper level could not be asked. The quality of data from email interviews might have been limited as well, as it might have given the impression to the interviewees that it was more formal than face-to-face interviews, which allowed the interviewer and interviewees to break the ice. Email interviewees may have filtered their answers based on their personal criteria, rather than sharing their experience more vividly.

Limited time was allowed for face-to-face interviews due to interviewees' busy schedules. The average interview time was 42 minutes and this might have been insufficient time to fully describe the difficulties experienced. Overall, there may have been a personal shame

to fully and honestly disclose one's weaknesses or difficulties, or they may not have been able to share their experiences in more detail because of the short time allowed.

Thus, more number of interviewees in the same face-to-face-interview setting is needed for more profound results, with better interview skills so interviewees feel more comfortable to share their experience.

As the interviewees were all Korean and the participants were educated mainly in Korea and operated their businesses in Korea, the study results may not apply in other countries.

The data did not reflect other variables that might affect their business. For example, someone may have had more resources from the start, supported by their family or friends and other business community, so they may not have had much trouble with resource shortages. In addition, external circumstances, such as the economic or social situation at the time they started their business were not considered. Someone might have been in a worse economic situation when they started their business, and someone might have been in a more advantageous situation where they could get more support through government policies and programs.

There is a limitation in Discussion Section 5.3. I found a unique property from one interviewee compared to the others in regards to his business motivation, entrepreneurial identity, and activities to overcome the challenges he faced. This is significantly limited data, and it cannot be classified as meaningful. Indeed, a more profound and thorough investigation with larger data is necessary combined with an in-depth literature review to make my findings meaningful and push further. This subject is further addressed in the Section 7 with suggestions for future research related to design entrepreneurs' identity and their growth.

7. Implications

The following list has been prepared based on findings from this study to suggest what designers should do to better prepare themselves to start or operate a business successfully.

- 1) Acquiring business knowledge and skills are essential, especially in marketing and sales, managing finances and building profitable business models.
- 2) It is important to understand that different roles and tasks are required depending on each entrepreneurial stage.
- 3) It is important not to neglect the step of acquiring resources, and to understand its complexity and challenges.
- 4) It might be worth noticing the risk of focusing on developing products.
- 5) It is worth considering adopting an 'open-minded attitude', especially for profitability.

Research implications as follows. Notably, one interviewee who achieved high-growth showed similar properties to missionary entrepreneurs (Gruber & MacMillan, 2017), who have a strong motivation to act on behalf of society and make the world better. This is an interesting finding as most of the rest of the interviewees seemed to be far closer to darwinian entrepreneurs (Gruber & MacMillan, 2017), who were more self-oriented.

Based on this insight, I think it may be meaningful to determine how the social and/or professional identity of design entrepreneurs relates to the level of growth of their firms. A potential research question might be: How does the design entrepreneurs' professional identity as crafters and /or darwinian social identity relate to the growth of their business?

Another meaningful future research topic would be determining how expert design entrepreneurs behave and think differently from novice design entrepreneurs. One of the findings from this research is that there were significant different perceptions on what were the important factors for successful businesses. For example, as described in the previous discussion in Section 5.3, the interviewee who achieved high-growth perceived that

acquiring great talent was the most important aspect in tackling his challenges. This was rarely mentioned by the other interviewees.

The results of this study are contradictory to Møller and colleagues (2013)' study on comparing design entrepreneurs' behaviour to expert entrepreneurs. They claim that expert entrepreneurs and design entrepreneurs are similar in that they use alliance and pre-commitment from stakeholders and interact with them. On the other hand, the findings in this study reveal that design entrepreneurs are rather inactive in stages where actions in engaging with customers and stakeholders are needed, such as marketing, market research, and networking. The results do not seem to be consistent, and the reason might be the small number of data resources in their study, as the authors pointed out, and also in this study. I think it would be meaningful to compare the behaviour of expert entrepreneurs and design entrepreneurs adapting Sarasvathy's principle (2008) with a greater number of cases, to understand the similarities and differences for a more profound result.

8. Conclusion

The objective of this research was to empirically investigate the challenges that design entrepreneurs face in their business, and to determine what aspects designers can supplement and prepare for when conducting business. The results of the study shows that design entrepreneurs lack business knowledge and skills, as discussed in-depth in the literature. In addition, they lacked understanding of the entrepreneurial stages for building organisation and different tasks and roles required in each stage especially when they first started a business. They showed a tendency to focus more on product development, and they were self-aware of this. Some interviewees regarded that it negatively impacted their business while others did not have a clear opinion about it. Finally, they had struggled with scarce resources but not everyone was active in acquiring resources.

The study supports extant empirical literature that it is important for design entrepreneurs to acquire business knowledge and skills. This research further suggests that design entrepreneurs need to acquire knowledge and skills in marketing and sales, managing finance and building profitable business models. In addition, from an entrepreneurial process perspective, the study argues that it is critical for designers to be aware of other entrepreneurial stages besides product development, the different roles and tasks required in each step, and what to learn and/or how to act accordingly.

The study suggests that the tendency of design entrepreneurs to focus on the product development in the business process has similar properties to professional identity as crafters (Björklund et al., 2020), and it is worth considering the risk when it comes to building a business successfully. Finally, the study suggests that design entrepreneurs might need to adapt a growth-oriented mindset in order to not only succeed but to survive in the business world.

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Appendices

Appendix 1. Interview Structure (Translated from Korean to English)

Grounding Questions

1. What is your major or design background?
2. When did you start your current business?
3. How many employees work in your company?
4. Do you have previous business experience?
5. Do you have previous working experience at companies?
6. Was there any particular motivation for starting your own business? Why did you start your business?

Actual Questions

1. What was the most difficult and most focused thing for you at the very early beginning of your business?
2. What is the most difficult and most focused thing for you after your business has passed the initial stabilization period?
3. What do you think are the qualities, mindsets and skills that are lacking in running your business?

Additional Questions

1. What do you think about yourself and your business in the future?
2. How did the design background help you run your business?
3. What advice would you give yourself if you could go back in time when you first started your business?